FIG. 1

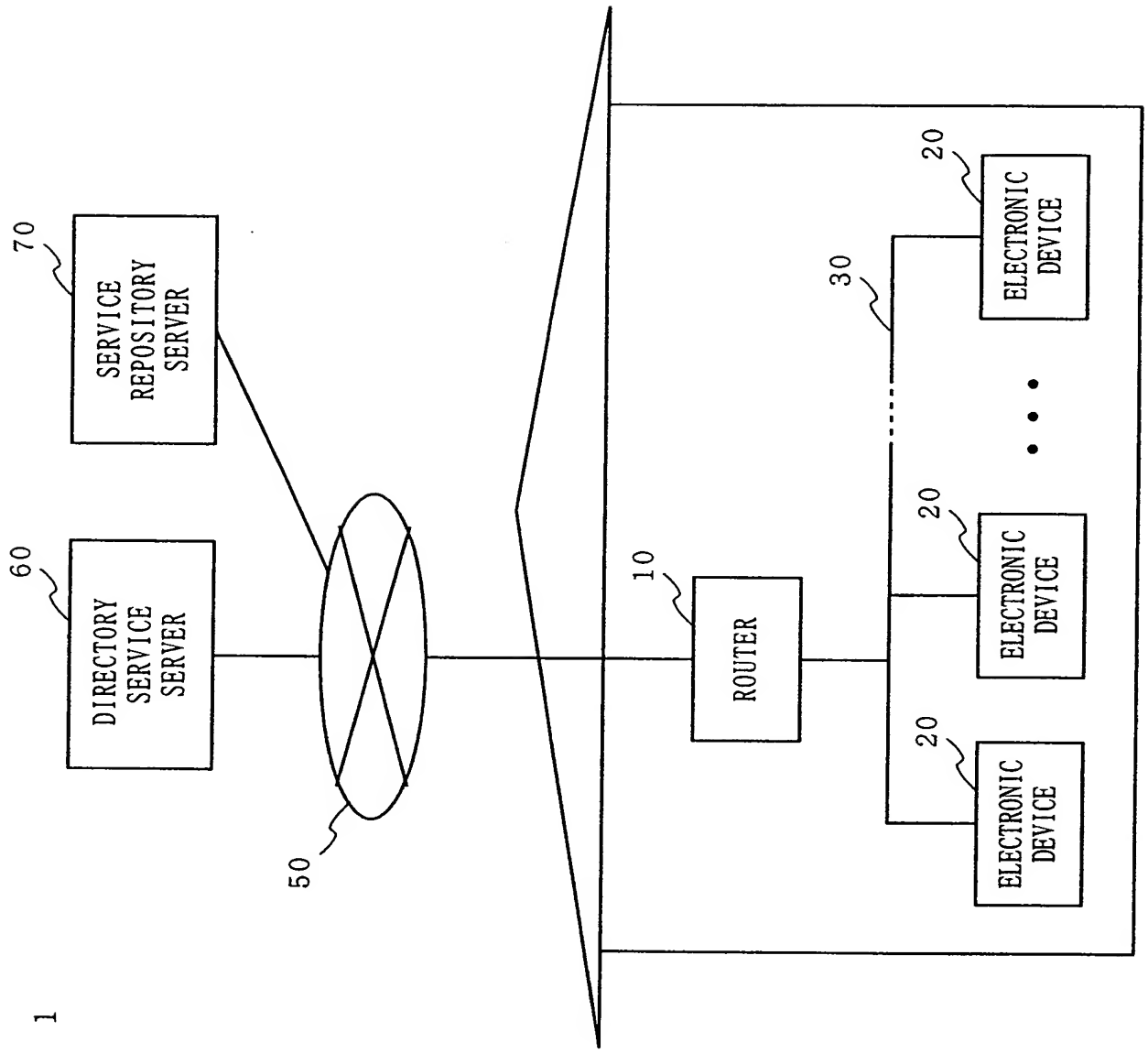

70
SERVICE REPOSITORY SERVER
60
DIRECTORY SERVICE SERVER
50
10
ROUTER
30
20
ELECTRONIC DEVICE
20
ELECTRONIC DEVICE
20
ELECTRONIC DEVICE

FIG. 2

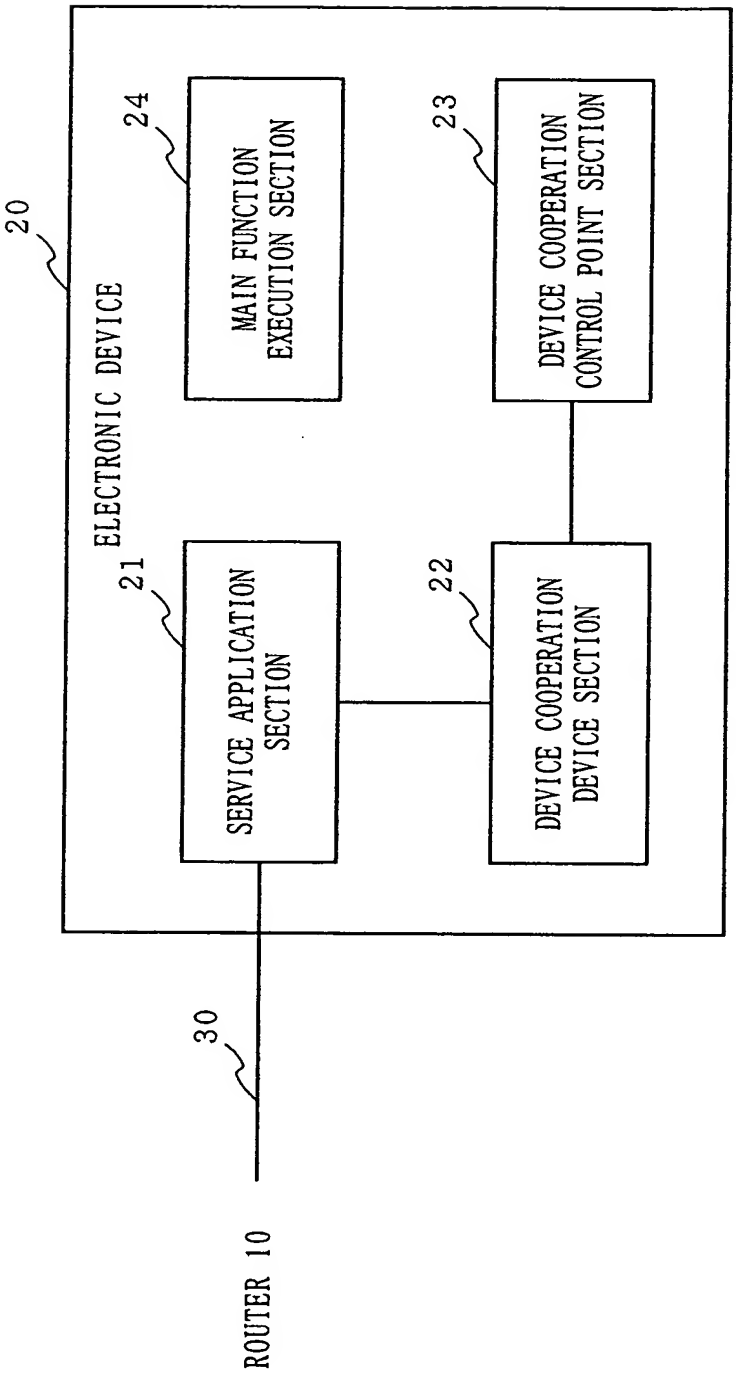

20
ELECTRONIC DEVICE
24
MAIN FUNCTION EXECUTION SECTION
23
DEVICE COOPERATION CONTROL POINT SECTION
21
SERVICE APPLICATION SECTION
22
DEVICE COOPERATION DEVICE SECTION
30
ROUTER 10

FIG. 3

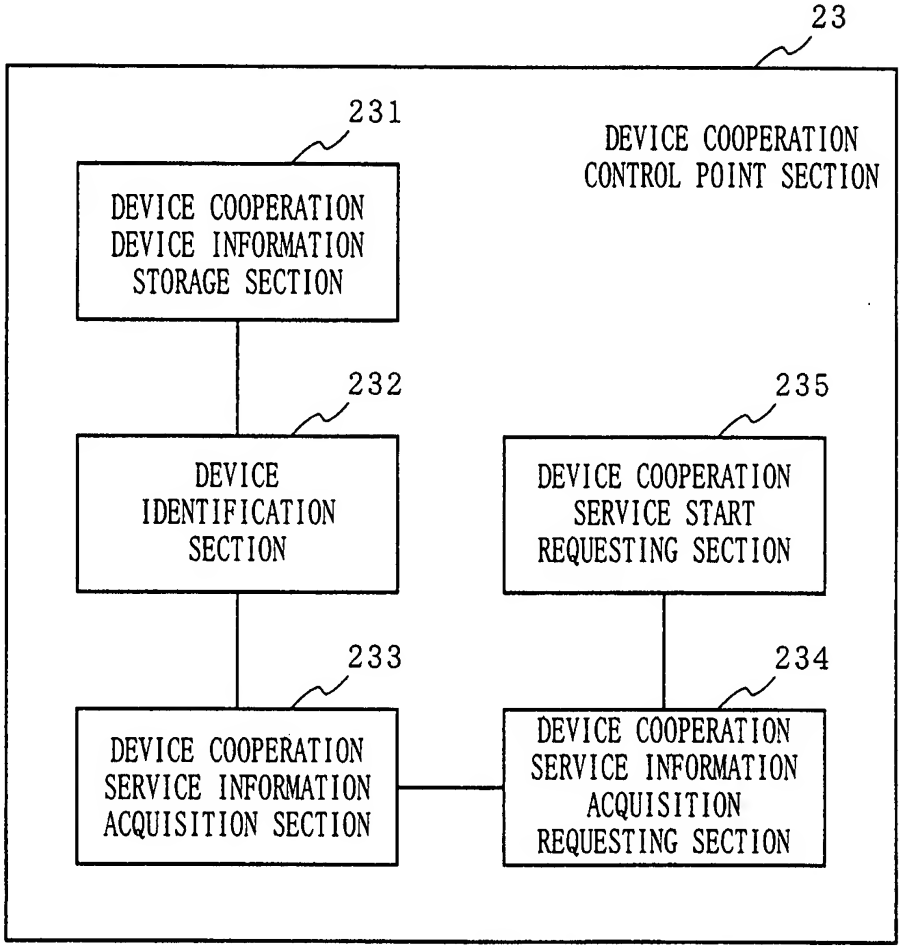

23
231
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE INFORMATION STORAGE SECTION
232
235
DEVICE IDENTIFICATION SECTION
DEVICE COOPERATION SERVICE START REQUESTING SECTION
233
234
DEVICE COOPERATION SERVICE INFORMATION ACQUISITION SECTION
DEVICE COOPERATION SERVICE INFORMATION ACQUISITION REQUESTING SECTION

FIG. 4

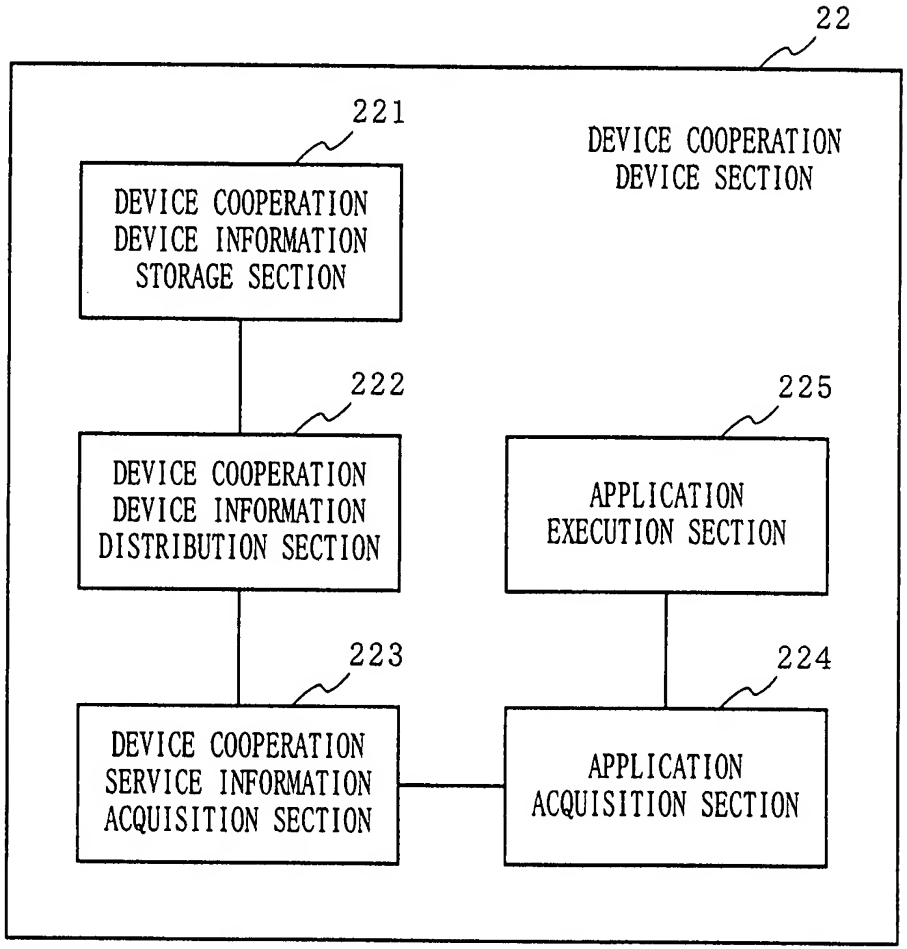

22
DEVICE COOPERATION DEVICE SECTION
221
DEVICE COOPERATION DEVICE INFORMATION STORAGE SECTION
222
DEVICE COOPERATION DEVICE INFORMATION DISTRIBUTION SECTION
223
DEVICE COOPERATION SERVICE INFORMATION ACQUISITION SECTION
225
APPLICATION EXECUTION SECTION
224
APPLICATION ACQUISITION SECTION

FIG. 5

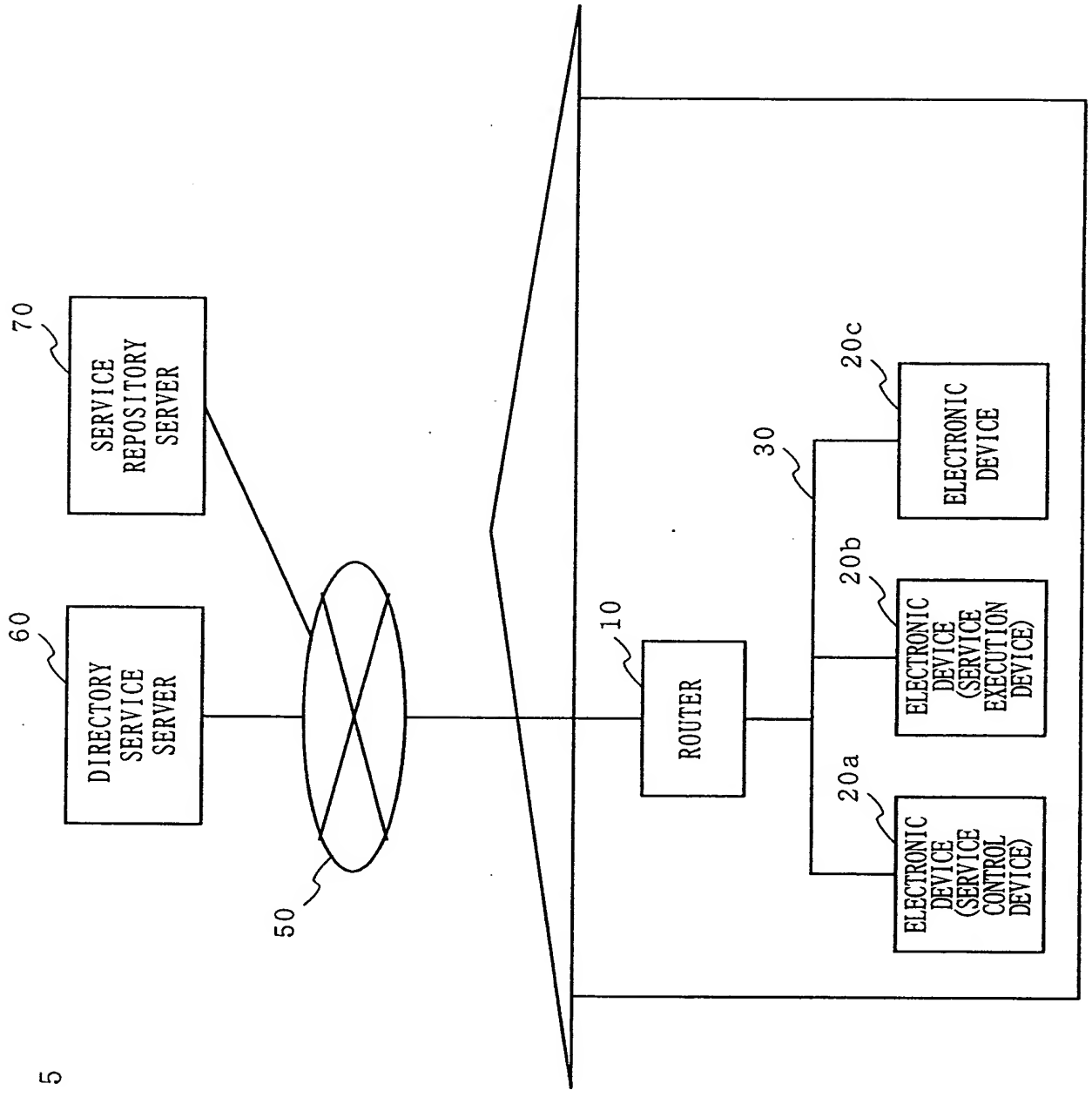

70
SERVICE REPOSITORY SERVER
60
DIRECTORY SERVICE SERVER
50
10
ROUTER
30
20a
ELECTRONIC DEVICE (SERVICE CONTROL DEVICE)
20b
ELECTRONIC DEVICE (SERVICE EXECUTION DEVICE)
20c
ELECTRONIC DEVICE

FIG. 6

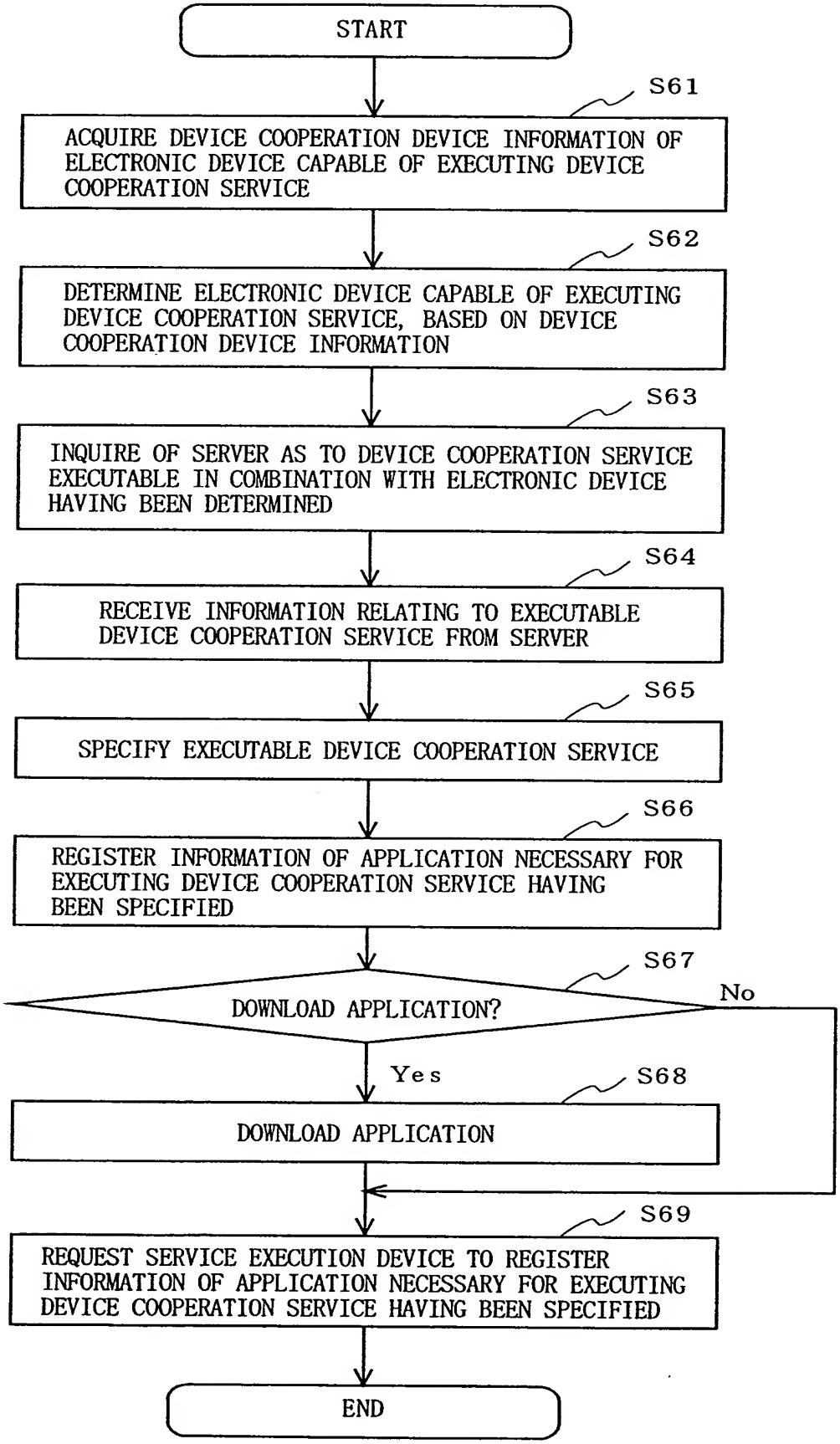

START
S61
ACQUIRE DEVICE COOPERATION DEVICE INFORMATION OF ELECTRONIC DEVICE CAPABLE OF EXECUTING DEVICE COOPERATION SERVICE
S62
DETERMINE ELECTRONIC DEVICE CAPABLE OF EXECUTING DEVICE COOPERATION SERVICE, BASED ON DEVICE COOPERATION DEVICE INFORMATION
S63
INQUIRE OF SERVER AS TO DEVICE COOPERATION SERVICE EXECUTABLE IN COMBINATION WITH ELECTRONIC DEVICE HAVING BEEN DETERMINED
S64
RECEIVE INFORMATION RELATING TO EXECUTABLE DEVICE COOPERATION SERVICE FROM SERVER
S65
SPECIFY EXECUTABLE DEVICE COOPERATION SERVICE
S66
REGISTER INFORMATION OF APPLICATION NECESSARY FOR EXECUTING DEVICE COOPERATION SERVICE HAVING BEEN SPECIFIED
S67
DOWNLOAD APPLICATION?
No
Yes
S68
DOWNLOAD APPLICATION
S69
REQUEST SERVICE EXECUTION DEVICE TO REGISTER INFORMATION OF APPLICATION NECESSARY FOR EXECUTING DEVICE COOPERATION SERVICE HAVING BEEN SPECIFIED
END

FIG. 7

DEVICE IDENTIFIER	D0001
DEVICE TYPE	P507i
DEVICE POSITION INFORMATION	1080:0:0:0:8:800:200C:417A
DEVICE COOPERATION SERVICE INFORMATION	pana.com/service_x

FIG. 8

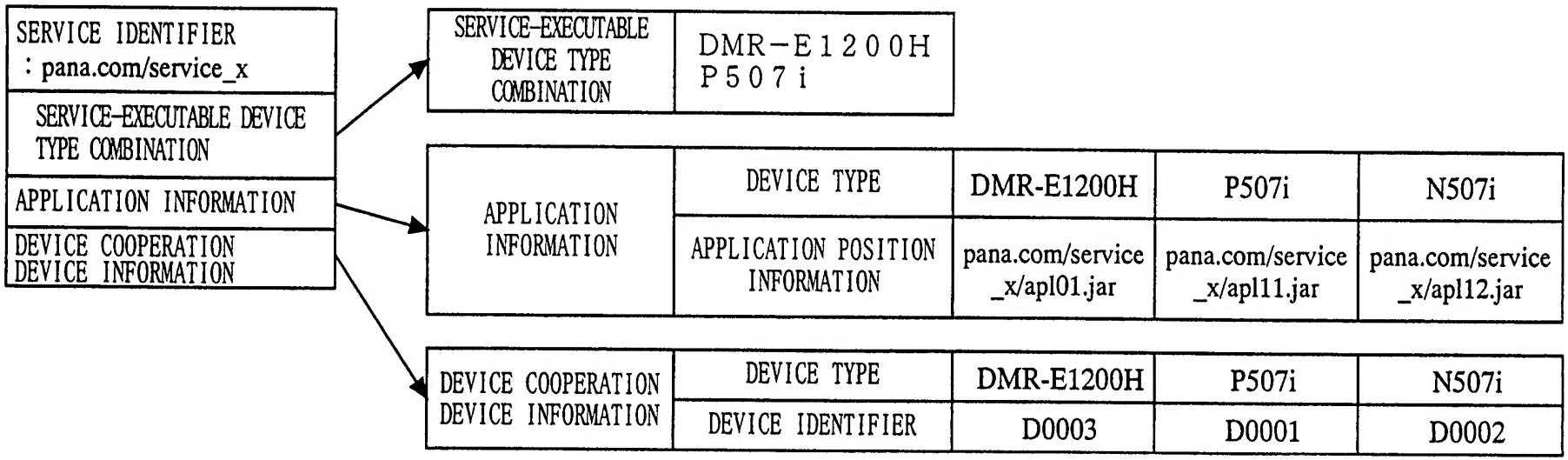


FIG. 9

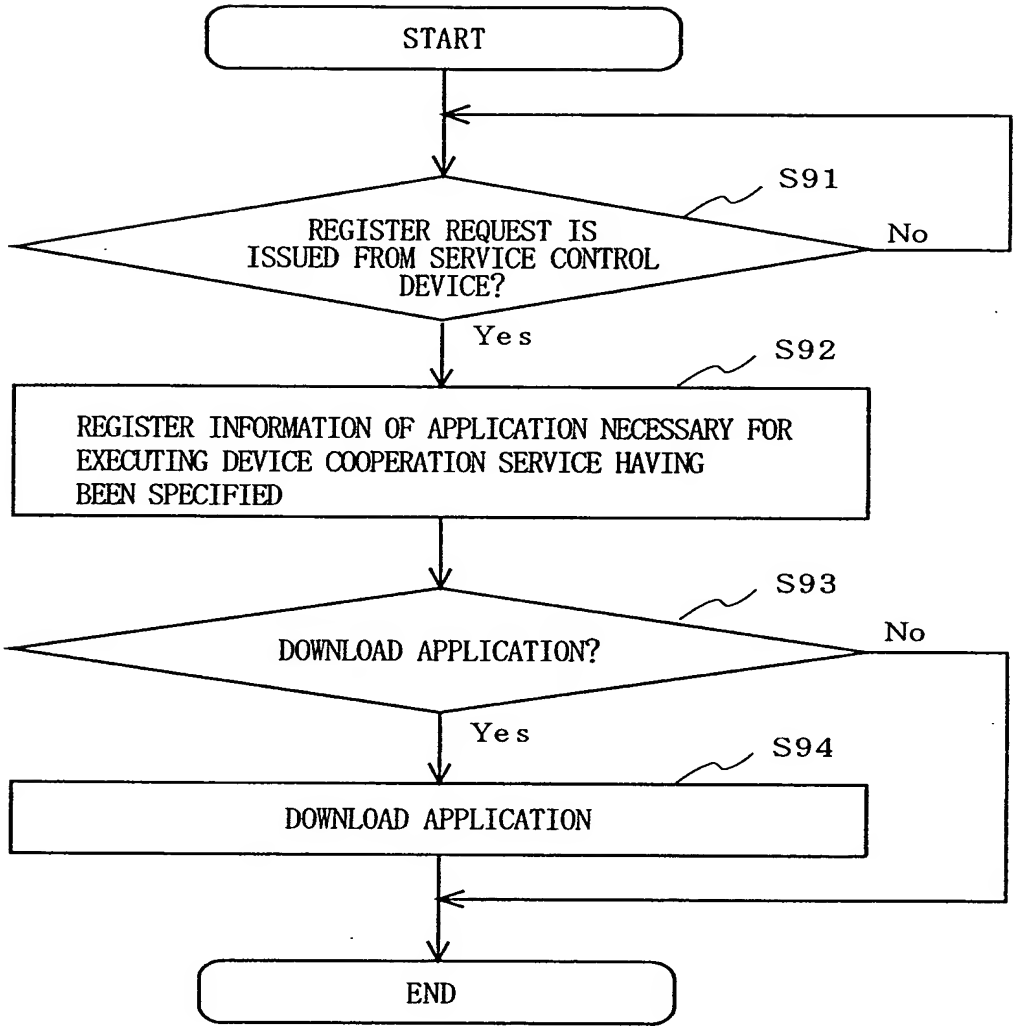

START
S91
REGISTER REQUEST IS ISSUED FROM SERVICE CONTROL DEVICE?
No
Yes
S92
REGISTER INFORMATION OF APPLICATION NECESSARY FOR EXECUTING DEVICE COOPERATION SERVICE HAVING BEEN SPECIFIED
S93
DOWNLOAD APPLICATION?
No
Yes
S94
DOWNLOAD APPLICATION
END

FIG. 10

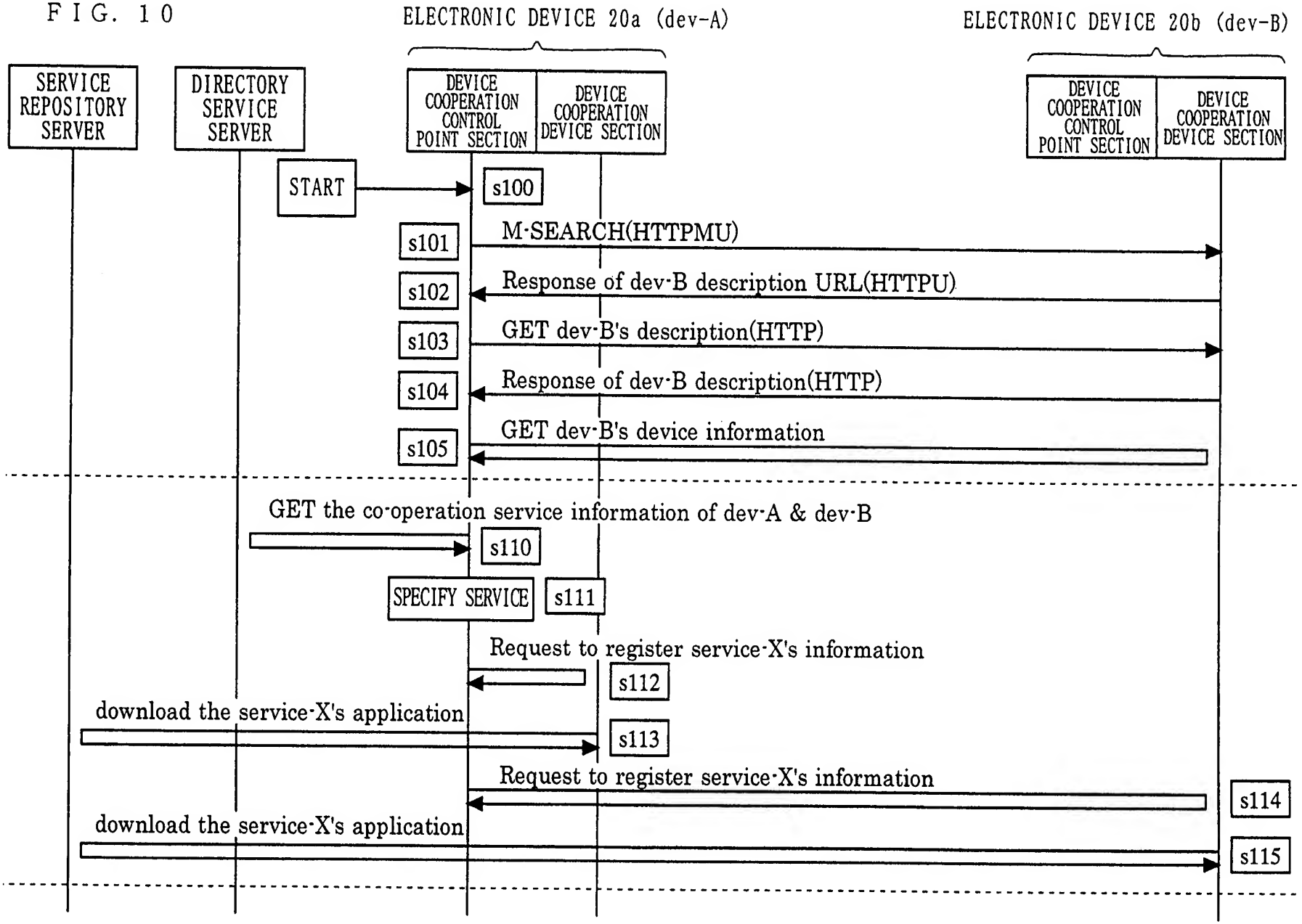

ELECTRONIC DEVICE 20a (dev-A)
ELECTRONIC DEVICE 20b (dev-B)
SERVICE REPOSITORY SERVER
DIRECTORY SERVICE SERVER
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
START
s100
s101
M-SEARCH(HTTPMU)
s102
Response of dev-B description URL(HTTPU)
s103
GET dev-B's description(HTTP)
s104
Response of dev-B description(HTTP)
s105
GET dev-B's device information
GET the co-operation service information of dev-A & dev-B
s110
SPECIFY SERVICE
s111
Request to register service-X's information
s112
download the service-X's application
s113
Request to register service-X's information
s114
download the service-X's application
s115

FIG. 11

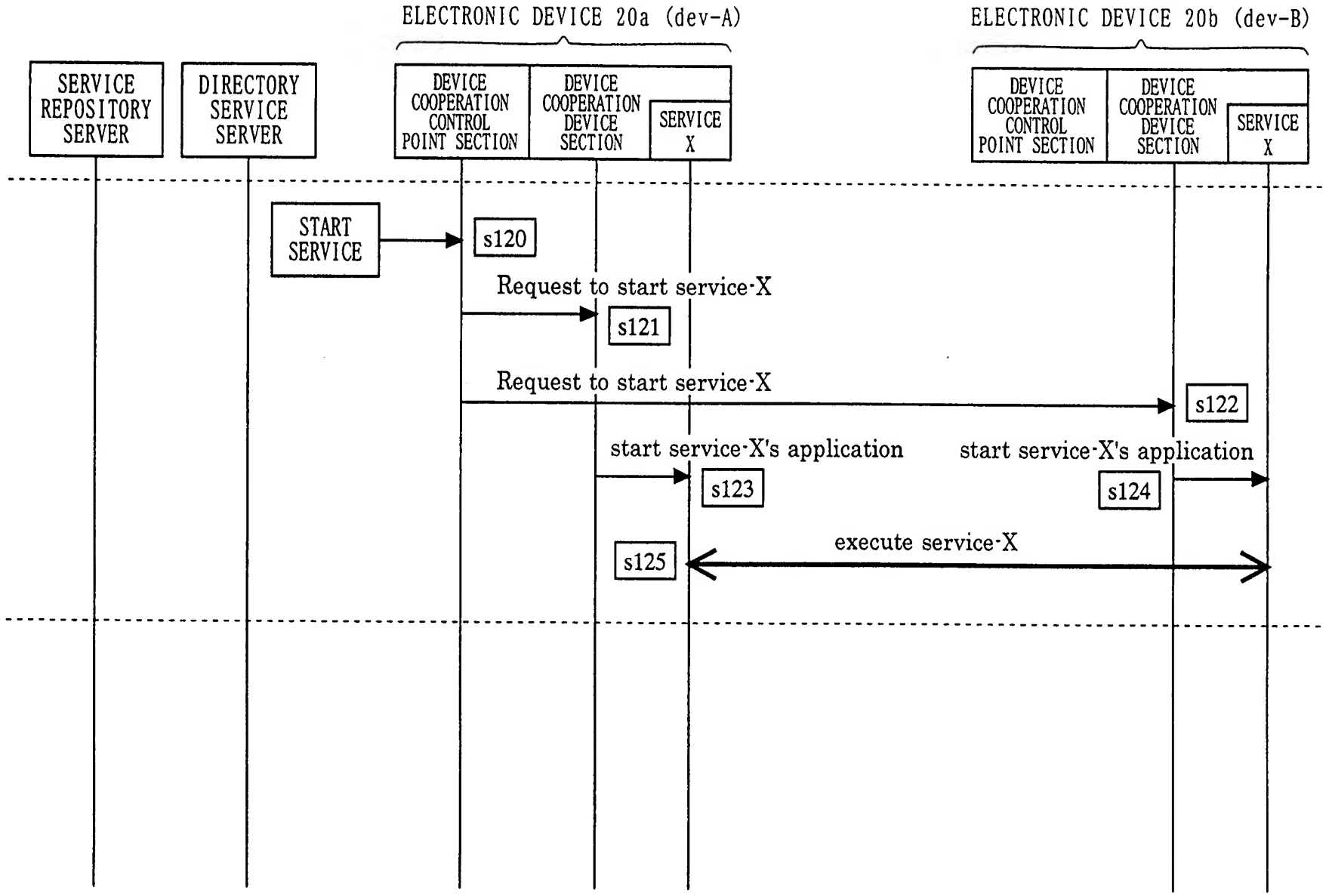

ELECTRONIC DEVICE 20a (dev-A)
ELECTRONIC DEVICE 20b (dev-B)
SERVICE REPOSITORY SERVER
DIRECTORY SERVICE SERVER
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
SERVICE X
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
SERVICE X
START SERVICE
s120
Request to start service-X
s121
Request to start service-X
s122
start service-X's application
s123
start service-X's application
s124
execute service-X
s125

FIG. 12

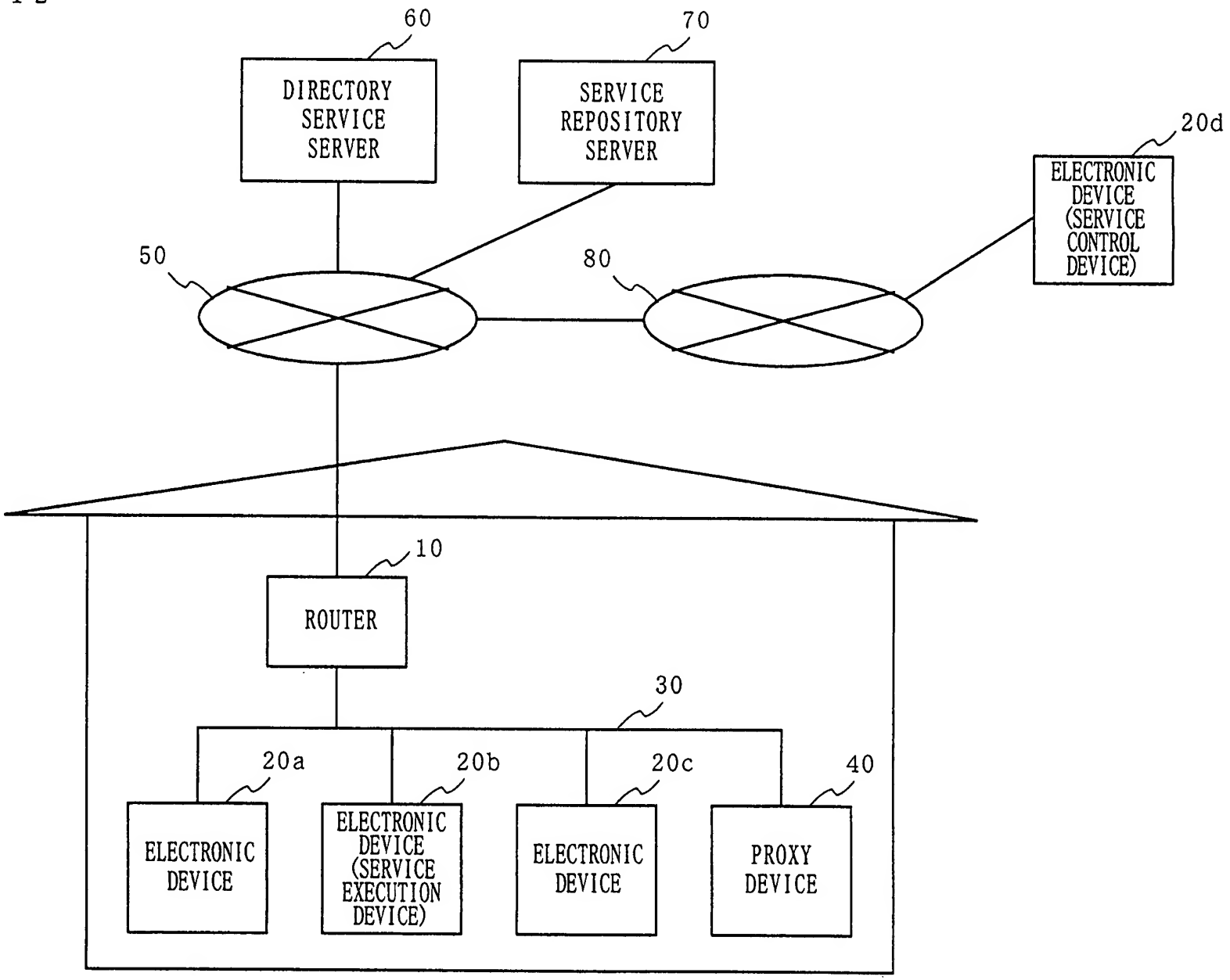

60
DIRECTORY SERVICE SERVER
70
SERVICE REPOSITORY SERVER
20d
ELECTRONIC DEVICE (SERVICE CONTROL DEVICE)
50
80
10
ROUTER
30
20a
20b
20c
40
ELECTRONIC DEVICE
ELECTRONIC DEVICE (SERVICE EXECUTION DEVICE)
ELECTRONIC DEVICE
PROXY DEVICE

FIG. 13

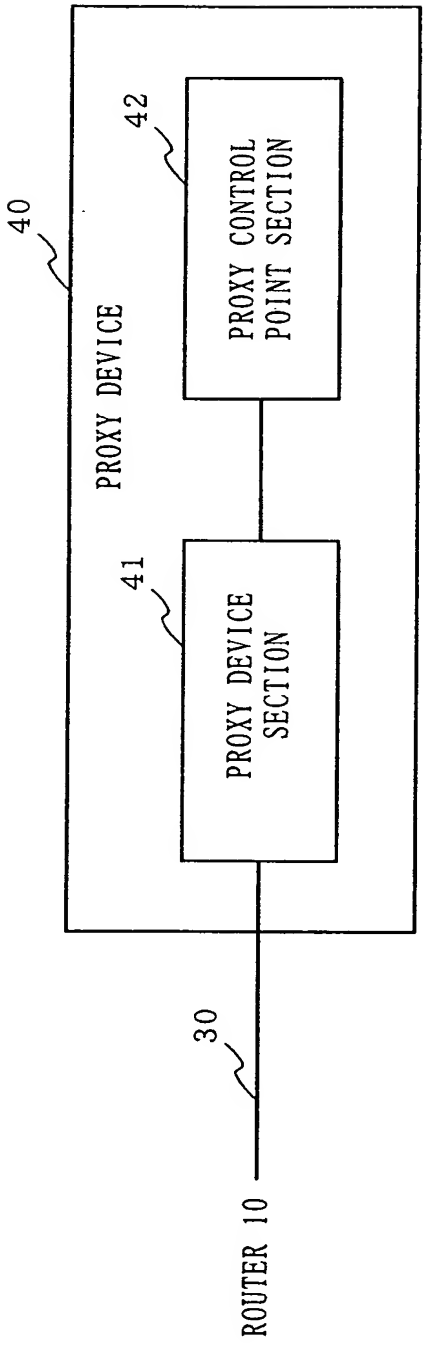

40
PROXY DEVICE
42
PROXY CONTROL POINT SECTION
41
PROXY DEVICE SECTION
30
ROUTER 10

FIG. 14

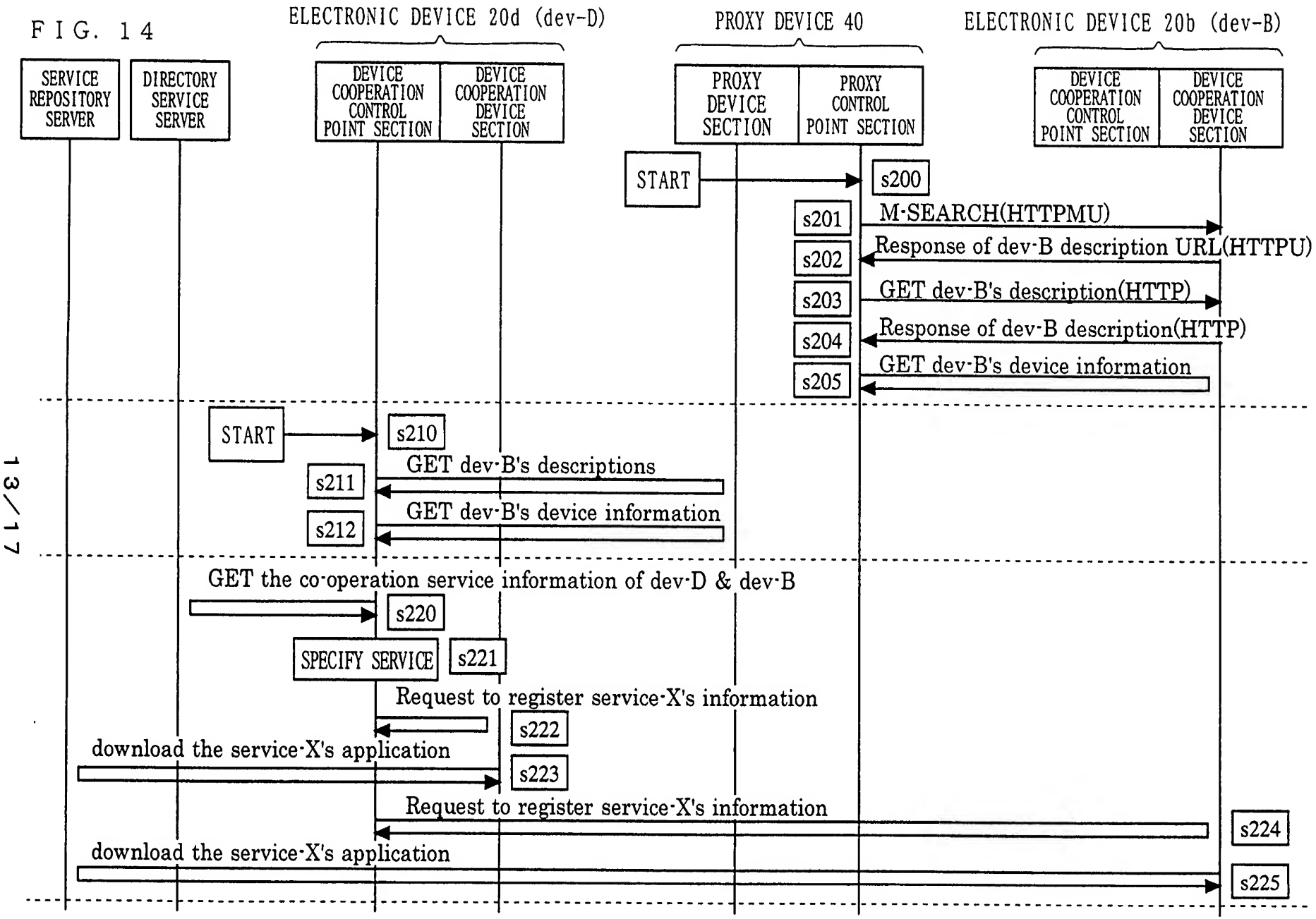

SERVICE REPOSITORY SERVER
DIRECTORY SERVICE SERVER
ELECTRONIC DEVICE 20d (dev-D)
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
PROXY DEVICE 40
PROXY DEVICE SECTION
PROXY CONTROL POINT SECTION
ELECTRONIC DEVICE 20b (dev-B)
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
START
s200
s201
M-SEARCH(HTTPMU)
s202
Response of dev-B description URL(HTTPU)
s203
GET dev-B's description(HTTP)
s204
Response of dev-B description(HTTP)
s205
GET dev-B's device information
START
s210
s211
GET dev-B's descriptions
s212
GET dev-B's device information
GET the co-operation service information of dev-D & dev-B
s220
SPECIFY SERVICE
s221
Request to register service-X's information
s222
download the service-X's application
s223
Request to register service-X's information
s224
download the service-X's application
s225

FIG. 15

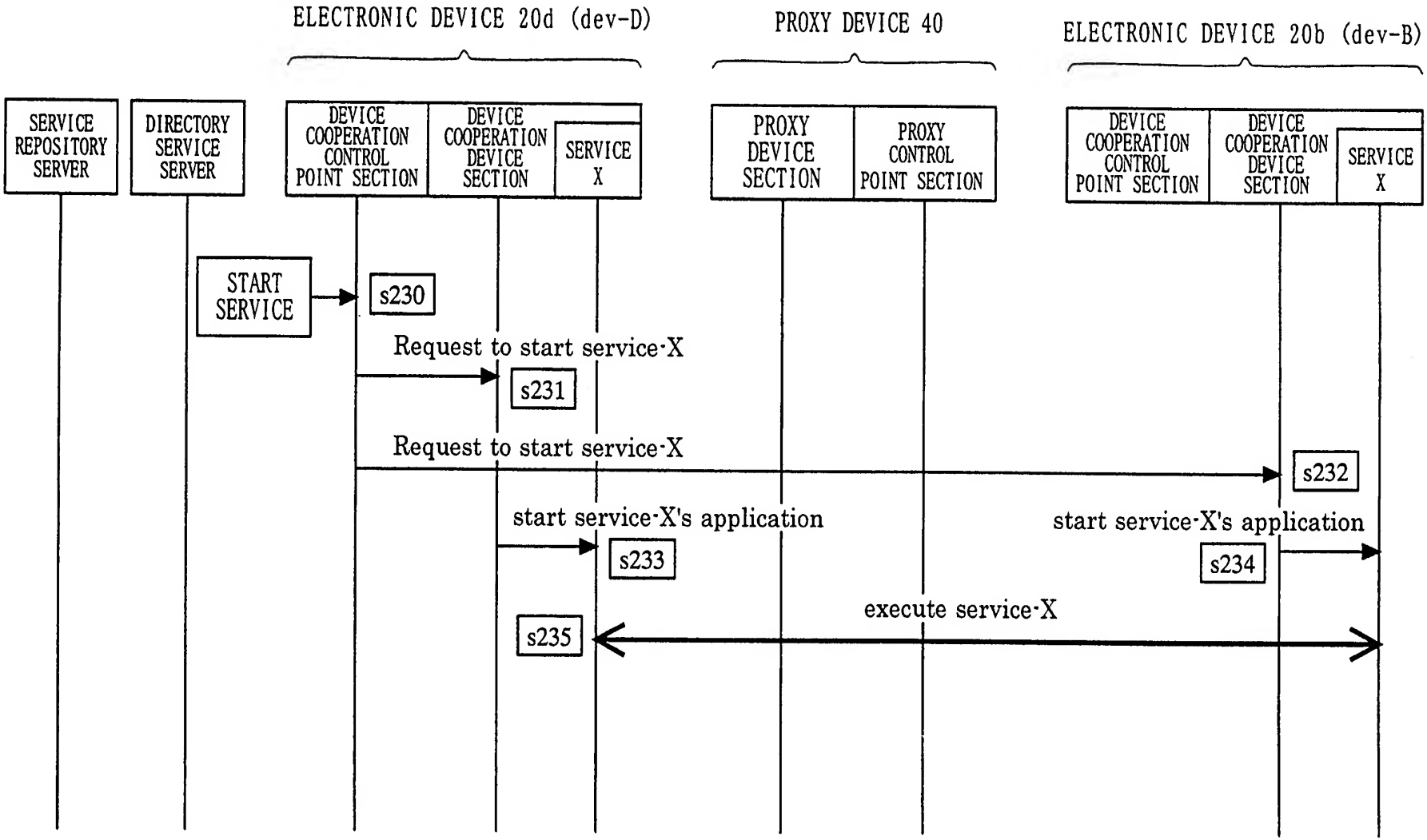

ELECTRONIC DEVICE 20d (dev-D)
PROXY DEVICE 40
ELECTRONIC DEVICE 20b (dev-B)
SERVICE REPOSITORY SERVER
DIRECTORY SERVICE SERVER
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
SERVICE X
PROXY DEVICE SECTION
PROXY CONTROL POINT SECTION
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
SERVICE X
START SERVICE
s230
Request to start service-X
s231
Request to start service-X
s232
start service-X's application
s233
start service-X's application
s234
execute service-X
s235

FIG. 16

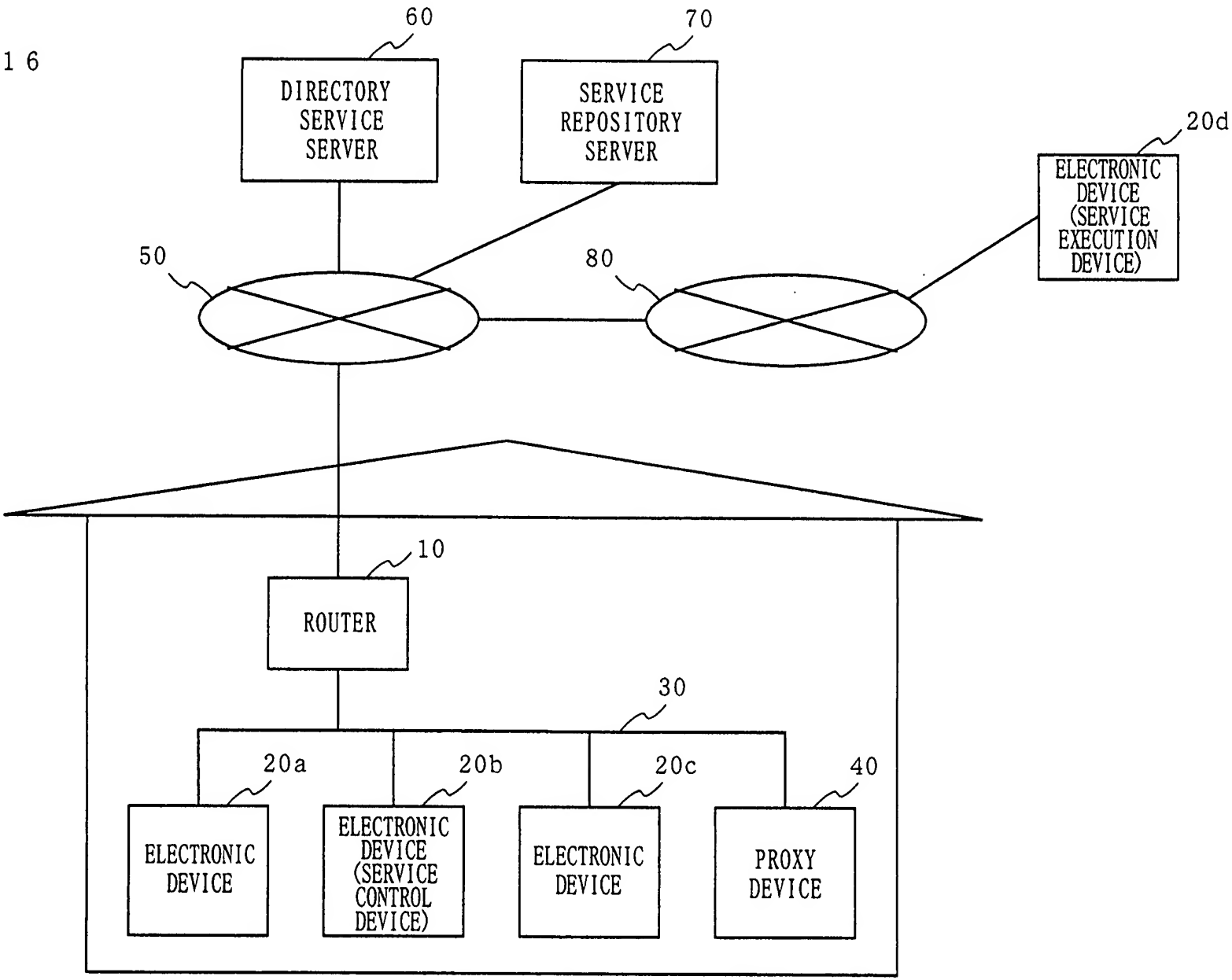

60
70
DIRECTORY SERVICE SERVER
SERVICE REPOSITORY SERVER
20d
ELECTRONIC DEVICE (SERVICE EXECUTION DEVICE)
50
80
10
ROUTER
30
20a
20b
20c
40
ELECTRONIC DEVICE
ELECTRONIC DEVICE (SERVICE CONTROL DEVICE)
ELECTRONIC DEVICE
PROXY DEVICE

FIG. 17

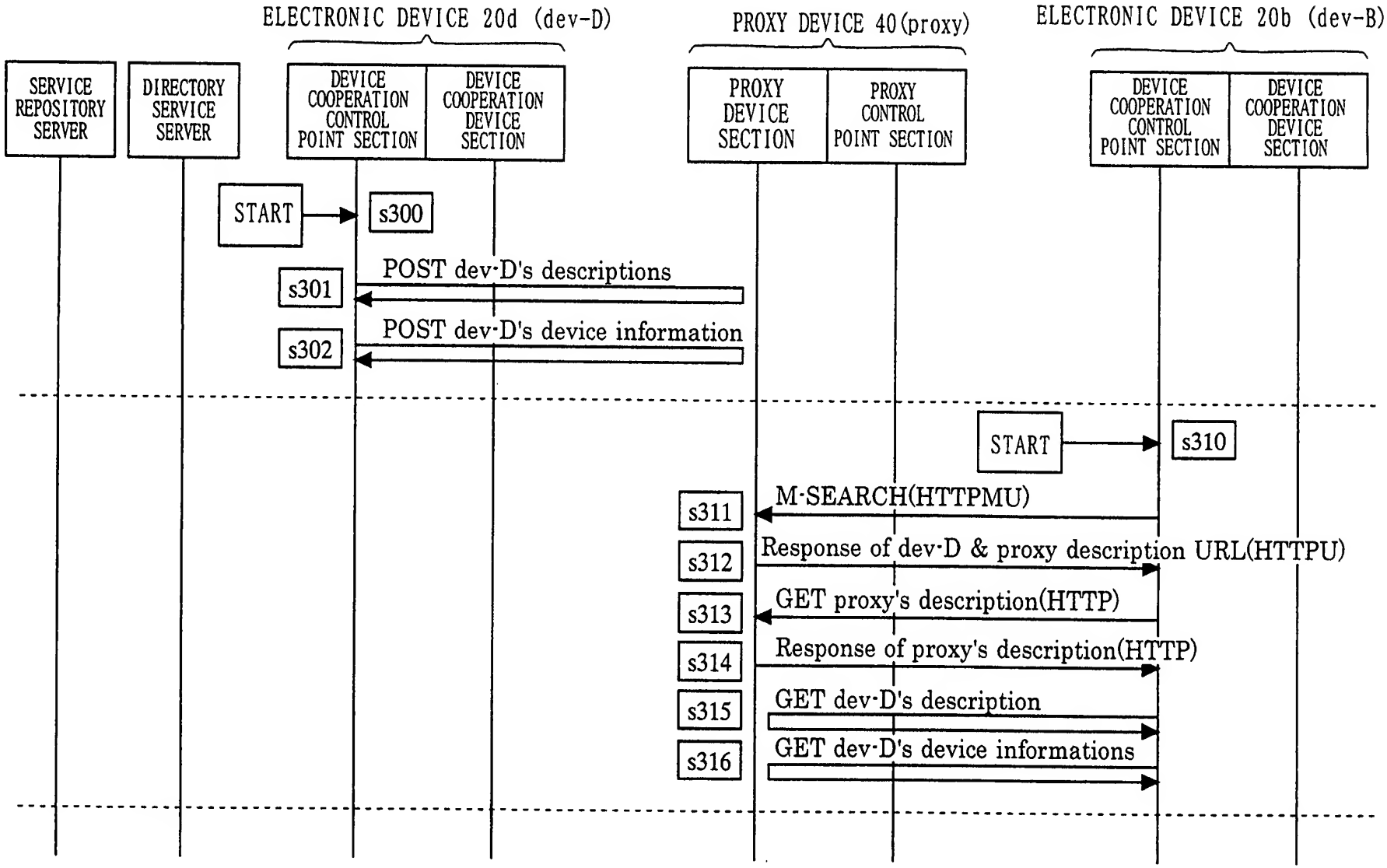
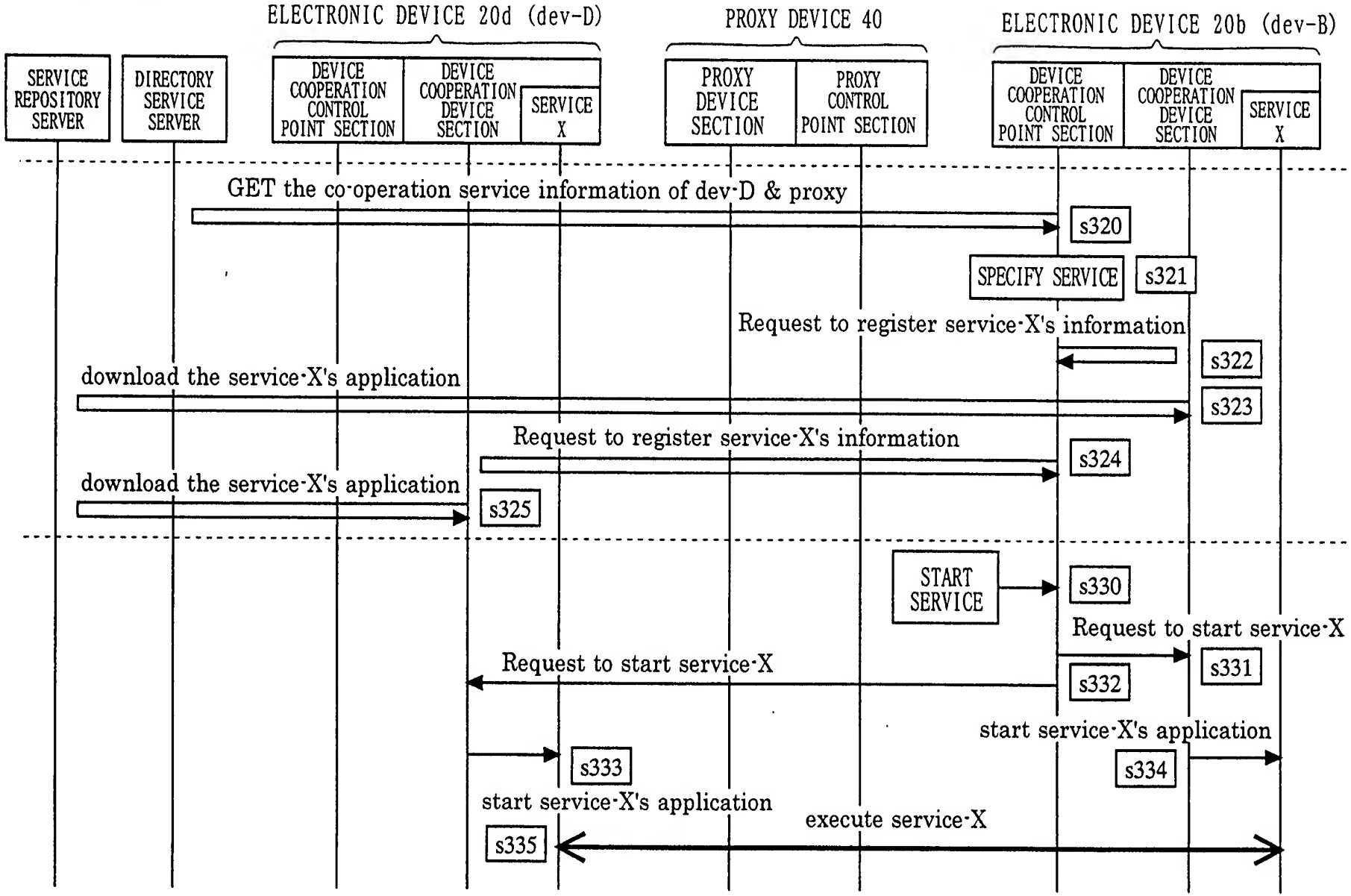

ELECTRONIC DEVICE 20d (dev-D)
PROXY DEVICE 40(proxy)
ELECTRONIC DEVICE 20b (dev-B)
SERVICE REPOSITORY SERVER
DIRECTORY SERVICE SERVER
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
PROXY DEVICE SECTION
PROXY CONTROL POINT SECTION
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
START
s300
s301
POST dev-D's descriptions
s302
POST dev-D's device information
START
s310
s311
M-SEARCH(HTTPMU)
s312
Response of dev-D & proxy description URL(HTTPU)
s313
GET proxy's description(HTTP)
s314
Response of proxy's description(HTTP)
s315
GET dev-D's description
s316
GET dev-D's device informations

FIG. 18


ELECTRONIC DEVICE 20d (dev-D)
PROXY DEVICE 40
ELECTRONIC DEVICE 20b (dev-B)
SERVICE REPOSITORY SERVER
DIRECTORY SERVICE SERVER
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
SERVICE X
PROXY DEVICE SECTION
PROXY CONTROL POINT SECTION
DEVICE COOPERATION CONTROL POINT SECTION
DEVICE COOPERATION DEVICE SECTION
SERVICE X
GET the co-operation service information of dev-D & proxy
s320
SPECIFY SERVICE
s321
Request to register service-X's information
s322
download the service-X's application
s323
Request to register service-X's information
s324
download the service-X's application
s325
START SERVICE
s330
Request to start service-X
s331
Request to start service-X
s332
start service-X's application
s333
s334
start service-X's application
execute service-X
s335